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(54) Title: **CONVERSION OF ALKANES HAVING AT MOST 5 CARBONATOMS TO ALCOHOLS AND/OR ALDEHYDES USING A PLATINUM COMPLEX CATALYST**

(57) Abstract: A gas-phase process is provided for catalytic conversion of a lower alkane comprising at most 5 carbon atoms to at least one product selected from the group consisting of alcohols, aldehydes and mixtures thereof. The process comprises bringing said lower alkane into contact with an oxidising agent in the presence of a catalyst comprising at least one platinum complex. The invention also provides such catalyst for use in the process. The catalyst comprises a platinum complex having a platinum cation core. It has two ligands selected from amino ligands, hydroxyl ligands and imidazolyl ligands whereby the complex is bonded chemically to a metal oxide support. It also has four other ligands selected from hydroxyl ligands, chloro ligands and amino ligands.

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